Infineon
Preferred
Partner

Preferred Design House of Infineon Technologies AG
Basic & Premium Consultancy Model

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www.tbench-solutions.com

TBENCH.SOLUTIONS

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Introduction

TBench.Solutions was founded in 2017 as a spin-off from Helmut-Schmidt-University. During the last couple of years our focus was to bring necessary knowledge about microcontrollers to customers who are integrating IFX technology into their technical systems.

Due to a huge amount of provided functionality, Infineon microcontrollers fit into almost every system with its scalability from low up to high end applications. Further Infineon provides a well sorted portfolio of other parts e.g. Power-ICs, Automotive-System-ICs, Battery-Management-ICs, Sensors, Transceivers as well as Memory-Devices, which together can form a complete system.

To access 32-bit Microcontrollers different tools are available. Tools for editing, compiling, debugging and also tracing are available. Our special partnership with TASKING provides us insight into their whole toolchain. This knowledge is also offered to our customers on request. Nevertheless, we offer all basic starting points from other platforms as well.

Industrial and Automotive applications often come with requirements, where for example Functional Safety plays a special role. Hence, for customers who are struggling with Functional Safety regulations, we offer dedicated ISO26262 know-how. We provide a TÜV-SÜD certified Automotive Functional Safety Engineer for you to bridge this gap.

Every product is urged to be tested whether in black- or white-box fashion. Hence, the International Software Testing Qualifications Board (ISTQB) embodies everything what is necessary for those activities. We provide our own ISTQB Certified Tester helping you ensure proper test handling.

If you are working within the world of Embedded Linux or even in both the real-time and none-real-time world, we offer support on how to bring your application into life. Whether for user-mode or kernel-mode drivers, the kernel, the device tree blob, the bootloader, and/or the application itself, we provide you the whole package.

For customers who have more stringent requirements in terms of parallelism, we offer dedicated VHDL support for FPGA programming as well.

Managing Director
J. Müller

Product Support Overview

	AURIX™	XMC™	Traveo™ II	PSoC™ 4
Powertrain	**Application** Powertrain domain controller Gasoline/ Diesel direct injection Gasoline multiport injection Automatic transmission Transfer case/torque vectoring	**Application** Sub controller	**Application** Vehicle motor control	**Application** N/A
xEV	**Application** Battery Management Off-board charging Charging station Inverter Low-voltage DC-DC High-voltage DC-DC	**Application** Sub controller	**Application** Battery Management	**Application** N/A
Safety / Automotive	**Application** Chassis domain control Electric Power Steering (EPS) Active suspension control system Advanced airbag system Braking ECU Multi-purpose camera configuration Short-range radar (24/60 GHz) Long-range radar (76/77 GHz) LIDAR systems LED pixel lighting Sensor fusion eHorizon	**Application** Short-range radar 24 GHz	**Application** Front/Rear Light Fog Lamp Head Light Flasher Mirror Door Lock Window lift Audio Dashboard HVAC Keyless Entry Indicator Wiper/Washer Rain Sensor Ambient Light Sensor Cabin Lamp Car Door Button (PSoC4) Motor Position	**Application** Capacitive touch
Connectivity	**Application** Body domain control Connected gateway Advanced body applications Pixel lighting In-vehicle wireless charger Telematics V2x communication	**Application** Wireless charging IoT Amazon FreeRTOS	**Application** WVGA Display WQVGA HUB Display Camera I/O Expansion (PSoC4) Speaker Analog Gauges Automotive COM	**Application** Wireless COM Blue Tooth Low Energy (BLE)
Transportation	**Application** Commercial and Agricultural Vehicle (CAV) Fun vehicle Transportation Trucks Drone Avionics	**Application** Wireless charging	**Application** Commercial and Agricultural Vehicle (CAV) Fun vehicle Transportation Trucks Drone Avionics	**Application** Wireless COM Blue Tooth Low Energy (BLE) Capacitive touch
Industrial & Multimarket	**Application** Mobile controller Inverter Wind turbine inverter Servo drives Solar panel Robotics Medical Elevator Motor control	**Application** Solar panel microinverter Solar panel optimizer Wireless charging Motor control Streetlights Automatic opening systems 3D printers Portable generator	**Application** Mobile controller Robotics Medical Vending Machines Household Machines	**Application** Wireless COM Blue Tooth Low Energy (BLE) Capacitive touch Analog sensor-integration Vending Machines Household Dev.

*for more information please visit www.infineon.com

Basic Services

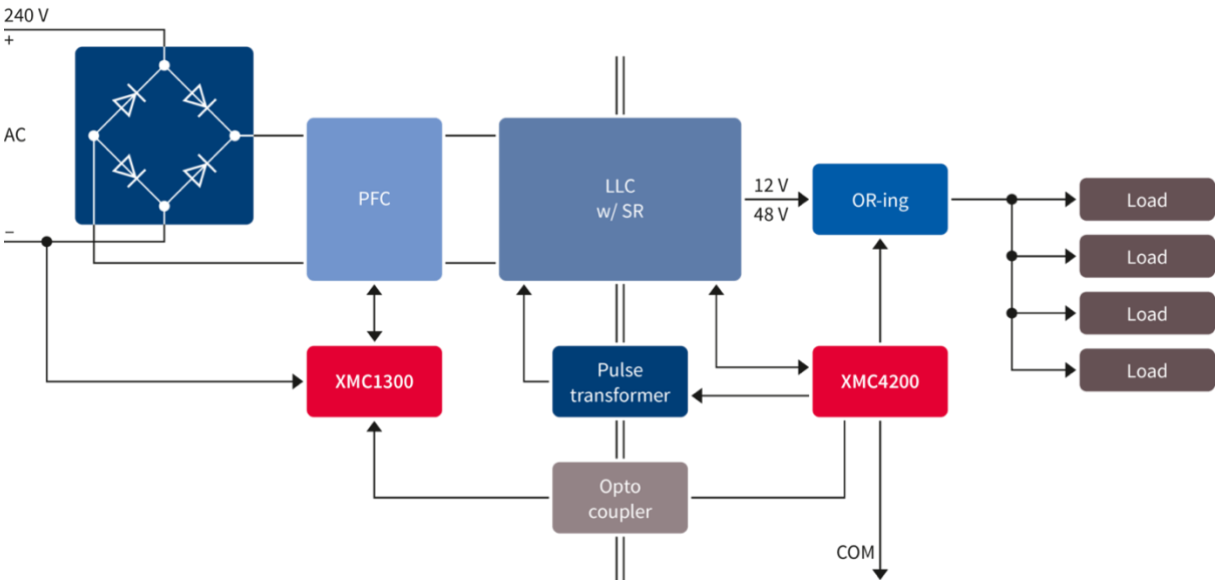
The Basic Service include everything for your successful start. Showing you how to setup your TriBoard, ShieldBuddy or even other related off the shelf PCBs, helps you making your first experiences.

Further we will help you choosing the right controller for your current and possibly future needs. We will teach you how to work with the related IDE and also give you some insights why things in the IDE are the way they are.

To summarize, PDH Basic Support Model services may answering following questions:

1. What about embedded peripherals?
2. How many cores are available and reasonable to use?
3. How to use dedicated IDEs?
4. How to bring your evaluation board up and running?
5. What kind of basic single core software development patterns are ready to use?
6. How to debug?

Please understand that this service is only available for customers who are already registered as Infineon customer with dedicated PDH support.



Premium Services

The Premium Support includes everything beyond basic. Customers who are ready to run but need further assistance in terms of coaching or development activities can take parts or receive even the whole package of what we are able to deliver. Because this service is not free of charge, you are required to find an extra agreement with us.

To summarize, PDH Premium Support Model services includes the following:

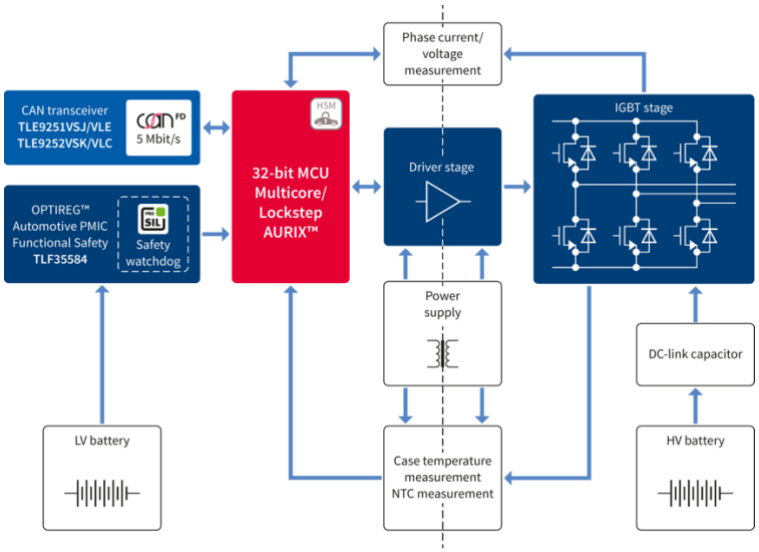
1. PCB development
    a. Schematic and Footprint library management
    b. Schematic drawing
    c. Board layout to your specifications

2. Software development
3. ISO26262 Automotive Functional Safety support
4. Test support
5. Project Management

Working on PCBs, Software, Test, or Automotive Functional Safety might require software licenses to be purchased at the customers side. We are experienced with Altium Designer, Tasking VX-Toolchain, Eclipse, IFX-iLLDs, Aurix Development Studio, as well as HighTec Free entry toolchain.

In case you work with other tools, we are also able to make a small ramp with you to finally adapt demanded needs.

Please understand that this service is only available for customers who are already registered as Infineon customer with dedicated PDH support.



Additional Services

For customers who are not orbiting around the Infineon product world, we also offer services. Especially systems without the focus on SIL or ASIL are not required to comply to overall safety standards by design. In this case a whole bunch of different hardware architectures are imaginable.

Hence, we offer programming and testing services for ARM based microcontrollers and FPGAs in general as well.

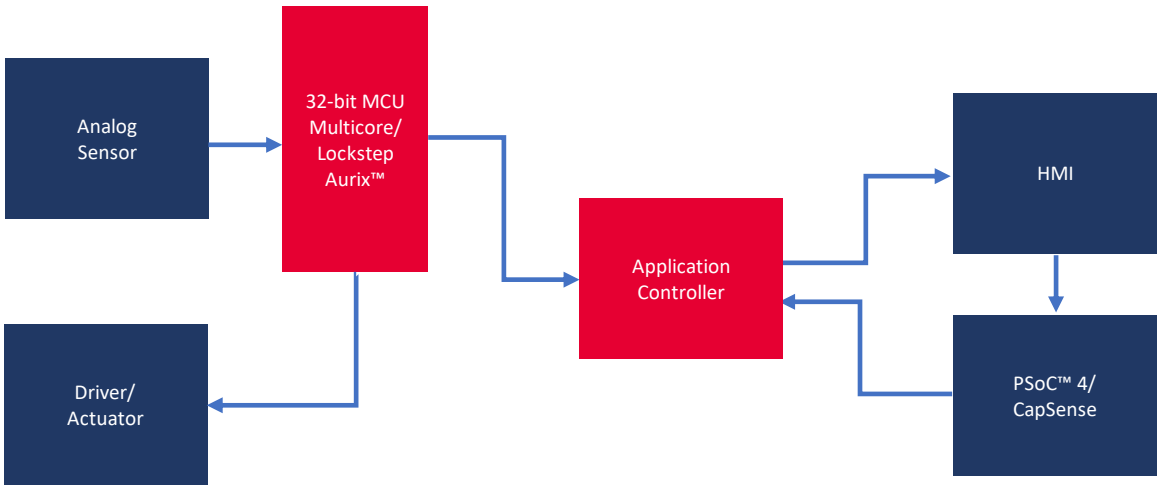
To handle operating systems like Embedded Linux you need to have enhanced memory and of course a Memory Management Unit. Since neither industrial nor automotive microcontrollers normally have those abilities, an application controller comes into play.

Customers who are delivering for example Vending machines, HMI- or even Measurement-devices are working with Embedded Linux due to its free available toolchain with a huge community behind. On many cases those customers are not really aware of legal issues related to e.g. GPL or LGPL. They further struggle with deploying their code because of various tools with different versions to use inside Linux.

Hence, the freedom of having everything open source comes often with a lot of issues. Here we provide clearness and transparency. We set up your project at application level and support you implementing drivers to interface hardware. We further give you an idea on how to deploy your source code in a better to use environment.

Summarized, we can give you the basics on how to work with Embedded Linux but also more enhanced knowledge bringing your ideas into life.

If you are planning to connect both, the real-time and none-real-time world with each other, we can also help. Since this service is not free of charge, you are required to find an extra agreement with us.



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